at that time 7 a. m.; a station in longitude 90°, such as New Orleans, is then six hours from the sun, and its clocks therefore indicate 6 a. m.; Denver, on the one hundred and fifth meridian, is seven hours from the sun and has 5 a. m.; Carson City, on the one hundred and twentieth meridian, which is eight hours from the sun, has 4 a. m.

One of the great reforms of the last twenty years has been silently advancing, until now it pervades all civilized nations. This amounts virtually to an international agreement that longitude and time shall be, as far as practicable, referred to the Greenwich meridian. As with railroads, so now with individuals, watches and clocks are no longer set to so-called astronomical local time, but to the time appropriate to the nearest whole hour from Greenwich. Thus, in the Atlantic States, we use seventy-fifth meridian time, but in the Mississippi watershed ninetieth meridian time, except, perhaps, in the western portion, where the one hundred and fifth meridian is adopted.

For many years meteorological observations have been made simultaneously in all parts of the globe, and in the majority of cases at 1 p. m., Greenwich time, but in a few cases at noon.

WHIRLING ALTO-CUMULUS CLOUDS.

The Weather Bureau Observer at San Diego, Cal., forwards the following extract from his daily journal for February 20, 1898:

An hour before sunset, or about 7:45 p. m., a narrow strip of fog was observed on the western horizon; above this, extending probably 35°, was a bank of alto-cumulus cloud. From the upper edge of this cloud whirling alto-cumulus took their flight one by one. These peculiar clouds, mentioned by Mr. McAdie in the MONTHLY WEATHER REVIEW, were beautifully formed and their rotary motion was almost apparent, the whirl from the time of formation to their dissolution in the upper region of alto-cirrus cloud lasted but four or five minutes.

CORRECTIONS.

Mr. R. DeC. Ward, who has lately returned from a visit to the Harvard College observatory meteorological stations in Peru, kindly calls attention to an error in the MONTHLY WEATHER REVIEW for December, in the foot-note on page 540. The altitude of the station at Echarati is 3,300 feet; the altitude, 11,378, as given in this foot-note, belongs to the station at Cuzco.

On page 541, line 4, for "1875" read "1895."

Mr. Morrill calls attention to the legend on Chart IV of the JANUARY REVIEW: The station temperatures are reduced to sea level by using a date that varies with the season of the year; it is 2° on the average for the whole year, but is 1.5° during December, January, and February.

RECENT EARTHQUAKES.

Prof. E. W. Morley, of Cleveland, Ohio, reports that no seismic disturbance was recorded there during February. There was also none recorded at the Weather Bureau on the Marvin seismoscope.

The following earthquakes have been reported:

2d, near Brinnon, Wash., slight shock of earthquake at 6:30 p. m.

20th, Corinne, Utah, earthquake at 5 p. m.

22d, Ellensburg, Wash., earthquake at 5:30 a. m.

FRANK BURKE.

Frank Burke, Local Forecast Official and Director of the Kentucky Section of the Climate and Crop Service, Weather Bureau, died at the home of his father, William H. Burke, at Watertown, Mass., on February 3, 1898, at the age of 36. He was born at Lowell, Mass., and was educated in the public schools of Boston and the Massachusetts Institute of Technology. He entered the Signal Service (now Weather Bureau) on May 11, 1880, and, after pursuing the prescribed course of instruction at Fort Whipple, Va., was assigned to duty as station assistant. For his good work he was successively promoted to the grades of first-class private, corporal, and sergeant in the military-meteorological service, and on July 1, 1891, he (with others) was transferred to the civilian position of observer in the Weather Bureau, by the Act of Congress transferring the meteorological duties of the Signal Service to the Department of Agriculture. In December, 1892, he was advanced to the grade of local forecast official, and on January 1, 1897, he received promotion to the important position which he held at the time of his death. He served at the following-named stations: Des Moines, Iowa; Helena, Fort Missoula, Crow's Nest, and Fort Maginnis, Mont.; Columbus, Ohio, and Louisville, Ky.; at the latter point he founded the Kentucky Section of the Climate and Crop Service.

Mr. Burke took an ardent, active, and intelligent interest in the work to which he gave so many years of his life, and by his death the Weather Bureau sustains the loss of one of its most trustworthy, efficient, and valued officials.

WILLIAM E. BUTLER.

Mr. William E. Butler, Observer, Weather Bureau, died on February 25, 1898. This announcement will be received with sadness by all who knew him.

Mr. Butler entered the meteorological service by enlistment in the Signal Corps in January, 1886, and was assigned to Fort Myer, Va., for instruction, thence to the Central Office in Washington, D. C., for clerical duty for a short period. In October, 1886, he was transferred to the station at Chicago, Ill., as assistant, following which he served in the same capacity at Jacksonville, Fla., Memphis, Tenn., and Atlanta, Ga. In March, 1892, he was placed in charge of the station at Vicksburg, Miss., and in December, of the same year, he was transferred to Hannibal, Mo., and placed in charge of the station there. He remained at Hannibal until August, 1895, when poor health made it necessary for him to seek a change of climate, and he was sent to the Denver, Colo., station as assistant. He remained there until June, 1896, when he was transferred to Omaha, Nebr., as assistant. He remained at Omaha only a few months when failing health again made it necessary for him to secure an assignment to a station of higher altitude. Accordingly he was sent to Salt Lake City, Utah, as an assistant. Here he faithfully performed his duties until September 28, 1897, when his weak physical condition compelled him to quit work. He went to Denver, Colo., to be with friends and receive medical treatment, where he continued to grow weaker, although hopeful to the last.

METEOROLOGICAL TABLES AND CHARTS.

By A. J. HENRY, Chief of Division of Records and Meteorological Data.

Table I gives, for about 130 Weather Bureau stations making two observations daily and for about 20 others making only one observation, the data ordinarily needed for climatological studies, viz, the monthly mean pressure, the monthly means and extremes of temperature, the average conditions as to moisture, cloudiness, movement of the wind, and the departures from normals in the case of pressure, temperature, and precipitation, the total depth of snowfall, and the mean wet-bulb temperatures. The altitudes of the instruments above ground are also given.